

What is claimed is:

1. A radio frequency band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
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2. A radio frequency filter according to claim 1, comprising a plurality of shunt acoustic resonators each arranged to resonate generally at the reject frequency band and a plurality of series acoustic resonators each arranged to anti-resonant generally at the reject frequency band, the shunt and series acoustic resonators being arranged in a ladder configuration.
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3. A radio frequency band reject filter according to claim 1, wherein the shunt and series acoustic resonators are each formed as an array of a plurality of serially and parallel connected resonators.
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4. A radio frequency filter according to claim 2, wherein the acoustic resonators are one port devices.
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5. A radio frequency filter according to claim 2, wherein the acoustic resonators are surface acoustic wave resonators.
6. A radio frequency filter according to claim 2, wherein the acoustic resonators are thin film bulk acoustic resonators.
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7. A radio frequency filter according to claim 2, further including a high Q matching network arranged to reduce the apparent capacitance of the filter outside the reject frequency band.
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8. A base station power amplifier for a cellular radio network, the power amplifier including at least one inter-stage band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
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9. A power amplifier filter according to claim 8, wherein the acoustic resonators are one port devices.
- 5 10. A power amplifier according to claim 8, wherein the acoustic resonators are surface acoustic wave resonators.
11. A power amplifier filter according to claim 8, wherein the acoustic resonators are thin film bulk acoustic resonators.
- 10 12. A duplexer for a mobile telephone handset including an radio frequency band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
- 15 13. A duplexer according to claim 12, wherein the acoustic resonators are one port devices.
- 20 14. A duplexer according to claim 12, wherein the acoustic resonators are surface acoustic wave resonators.
15. A duplexer according to claim 12, wherein the acoustic resonators are thin film bulk acoustic resonators
- 25 16. A low noise amplifier input stage including a band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
- 30 17. An input stage according to claim 16, wherein the acoustic resonators are one port devices.
- 35 18. An input stage according to claim 16, wherein the acoustic resonators are surface acoustic wave resonators.

19. An input stage according to claim 16, wherein the acoustic resonators are thin film bulk acoustic resonators.